

ABSTRACT OF THE DISCLOSURE

Described is a manufacturing method for a semiconductor integrated circuit device which comprises forming, over a gate insulating film which has been formed over the main surface of a single crystal silicon substrate to have an effective film thickness less than 5 nm in terms of SiO_2 , a W film as a gate electrode material, and heat treating the silicon substrate in a water-vapor- and hydrogen-containing gas atmosphere having a water vapor/hydrogen partial pressure ratio set at a ratio permitting oxidation of silicon without substantial oxidation of the W film, whereby defects of the gate insulating film right under the W film are repaired. According to the present invention, in a MISFET having a metal gate electrode formed over a ultra-thin gate insulating film having an effective film thickness less than 5 nm in terms of SiO_2 , defects of the gate insulating film can be repaired without oxidizing the metal gate electrode.